IN THE CLAIMS

A listing of the status of all claims 1-85 in the present patent application is provided below which will replace all prior versions, and listings, of claims in the application.

1. (Currently Amended) A process for ~~the~~ a recognition of a polyphase machine ~~(1)~~ connected to a converter ~~(10) which comprises~~ comprising a stator and a rotor ~~(1a, 1b)~~, ~~in particular prior to an active productive operation of the machine, with the following steps of~~ the process comprising:

(a) connecting ~~of~~ the polyphase machine with ~~its~~ several electric phases to the converter ~~(10)~~;

(b) supplying of a first test signal from the converter ~~(10)~~ to at least one of the several electric phases ~~, preferably a few of the several electric phases~~ of the connected polyphase machine ~~(1)~~;

(c) measuring of at least one causal consequence of the first test signal as a measured result;

(d) evaluating ~~of~~ the measured result as a causal consequence in order to obtain a first measuring value (r1);

(e) repeating of at least once steps (b) to (d) for at least one further test signal ~~in order to~~ and obtaining at least one further causal consequence and at least one further measuring value (r2);

(f) allocating of these ~~(at least)~~ two measuring values to a comparison function ~~(60, 50)~~;

(g) comparing ~~of~~ the comparison function with at least one of several reference functions ~~(60a, 60b, 50a, 50b)~~, each of which representing one type of a polyphase machine~~, in~~

~~particular two reference function not representing the same type of machines, in order~~ to select the reference function which is most similar to the reference function ~~(50, 60)~~;

(h) ~~stipulating of (25)~~ providing one of several available system programs ~~(12a, 12b, 12c)~~ in a control section ~~(11)~~ of the converter ~~(10) by means of~~ in accordance with the selected reference function;

to adapt the converter ~~(10)~~ to the machine ~~to be activated by it~~supplied by the converter.

2. (Currently Amended) The process according to claim 1, wherein the comparison function for at least one~~, preferably all~~ or more windings of the ~~(~~electric phases~~)~~ of the polyphase machine is created with several measuring results of several test signals, said several measuring results ~~gradually~~ step by step are forming the comparison function by ~~means of an~~ one of expanding and~~/or~~ supplementing.

3. (Currently Amended) The process according to claim 2, wherein the comparison function is compared with several reference functions ~~in order~~ to determine ~~the~~ a most similar thereof and the corresponding machine type ~~appertaining to it~~.

4. (Currently Amended) The process according to claim 3, wherein at least two reference functions do not represent the same machine type of polyphase machine.

5. (Currently Amended) The process according to claim 1 ~~or 3~~, wherein one of the reference functions ~~(50a)~~ represents an asynchronous machine as a polyphase machine.

6. (Currently Amended) The process according to claim ~~5, 3 or~~ 1, wherein one of the reference functions (60a) represents a synchronous machine as a polyphase machine.

7. (Currently Amended) The process according to claim 1, wherein the repetition according to ~~feature~~ step (e) is implemented at at least one other electric phase ~~(winding)~~ of the machine ~~(1) is implemented as~~ other than the phase used for steps (b) to (d) for obtaining the first measuring value (r1).

8. (Currently Amended) The process according to claim 1, wherein the converter comprises a control ~~part (11)~~ section and a power ~~part (10)~~section.

9. (Currently Amended) The process according to claim 1, wherein the converter is a power device which provides power actuating signals via several electric output phases ~~(n, 4)~~ and obtains ~~the actuating signals~~ power supply from an intermediate circuit~~, which is~~ fed from a rectifier from a mains~~(9, N)~~.

10. (Currently Amended) The process according to claim 1, wherein the comparison function ~~(60, 50)~~ and the at least one reference function ~~(50a, 60a)~~ represent the same physical magnitude as a sequence of measuring values (r1, r2) over the same system magnitude~~(α).~~

11. (Currently Amended) A process according to claim 10, wherein the physical magnitude is a resistance or impedance (Z) over a stator ~~(field)~~ angle (α) or stator field angle of the connected polyphase machine.

12. (Currently Amended) The process according to claim 10, wherein a course of the physical magnitude as a measuring value sequence in the reference function ~~(50a, 50b)~~ is substantially constant over a stator angle (α).

13. (Currently Amended) The process according to claim 10 ~~or 12~~, wherein at least one reference function ~~(50a, 50b)~~ does not have ~~any~~ a distinct maximum and ~~any~~ has no distinct minimum.

14. (Currently Amended) The process according to claim 10, wherein a course of the physical magnitude of at least one reference function has at least one distinct minimum and at least one distinct maximum ~~(60a, 60b)~~.

15. (Currently Amended) The process according to claim 11, wherein at least the majority of the ~~measured~~ resistance and impedance values (r1, r2, ...)~~, which are ascertained as measuring values, if plotted over~~ are provided dependent from the stator angle (α) and are within a band (b) ~~which is~~ formed by ~~not~~ no more than substantially ±20% of a mean value which results from the measuring values~~, in particular within a band of less than ±10% of the mean value~~.

16. (Currently Amended) The process according to ~~any of the preceding~~ claims 11 ~~to 15~~, wherein the measuring magnitude from the measured causal consequence of the first test signal is another physical magnitude ~~as~~ than an impedance or resistance.

17. (Currently Amended) The process according to claim 1~~ to 10~~, wherein several measuring results are evaluated and are allocated to the comparison function as several measuring values (50, 60), the evaluation including a conversion to determine a measuring value from the measuring result~~, e.g. a resistance or impedance calculation from a current measurement~~.

18. (Currently Amended) The process according to claim 1, wherein the several system programs ~~(12a, 12b, 12c) stand for~~ represent several types of polyphase machines ~~(1), in particular as a regulator program part, a control program part or a monitoring program part~~.

19. (Currently Amended) The process according to claim 1, wherein the at least one causal consequence is ~~one or several of~~ at least one of current, voltage, rotary speed or change in position.

20. (Currently Amended) The process according to claim 1, wherein the ~~at least~~ first test signal is one of a stationary alternating signal, a pulse signal ~~or~~ and a short-term ~~frequency~~ alternating signal.

21. (Currently Amended) The process according to claim 20, wherein the alternating signal has a frequency of at least 10 Hz~~, in particular~~ or a multiple thereof~~, in order not~~ to not substantially change a rotor of the polyphase machine in ~~it's a~~ rotational position (φ) thereof, while the alternating signal is present at the electric phases or windings of the polyphase machine ~~(1)~~.

22. (Currently Amended) The process according to claims 1~~, 2 or 20~~, wherein a respective test signal is impressed on the several phases at the same time and is a respective polyphase test signal.

23. (Currently Amended) The process according to claim 20~~ or 21~~, wherein the first test signal has a frequency of more than substantially 100 Hz.

24. (Currently Amended) The process according to claims 1~~, 20 or 23~~, wherein an alternating basic signal of less than substantially 10 Hz as the polyphase actuating signal slowly rotates ~~lets~~ the rotor ~~(1b)~~ of the polyphase machine ~~(1) slowly rotate~~ in ~~it's~~ a rotational position (φ) thereof and several test signals are modulated onto the polyphase ~~regulation variable~~ actuating signal at a time distance.

25. (Currently Amended) The process according to claim 1~~ or 20~~, wherein the rotor (1b) of the polyphase machine is moved to several, not equal (different) rotor positions (φ1, φ2) with an actuating signal in order to apply a respective test signal to the electric phases while the rotor remains at a respective rotational position and to measure the respective causal consequence for the evaluation to several measuring values for the comparison function~~ (50, 60)~~.

26. (Currently Amended) The process according to claim 25, wherein the movement ~~to~~ providing for a plurality of rotor positions (φ)~~, in particular more than 50 rotational positions~~ of the polyphase machine~~, take place~~ and are measured as regards ~~the~~ a respectively causal consequence ~~at~~ of a respective test signal.

27. (Original) The process according to claim 1, wherein steps (b) to (d) a repeated for a further test signal to obtain a further measuring value (r2).

28. (Currently Amended) The process according to claim 27, wherein the repetition is carried out ~~repeatedly~~ several times until a comparison function ~~(50, 60)~~ provided with several measuring values is formed~~, which is~~ for being compared with the at least one reference function ~~(60a, 60b, 50a, 50b)~~ according to ~~feature~~ step (e)~~of claim 1~~.

29. (Currently Amended) The process according to claim 27~~or 28~~, wherein each further polyphase test signal as a second, third, etc. test signal is a polyphase signal for forming several ~~flow~~ flux position vectors in the stator system (α) of the machine~~(1)~~, said vectors being located at different angular positions (α1, α2, α3) of the stator, ~~with practically~~ at no substantial movement of the rotor ~~(1b)~~.

30. (Currently Amended) A process for preparing a recognition of a type of a connected polyphase machine ~~(1)~~ as a machine with a rotor ~~(1b)~~ and a stator~~(1a)~~, said machine being activatable by a converter ~~(10, 11) with~~ by actuating signals ~~(4) for~~ to several electric phases; wherein

- the machine ~~(1)~~ is connected to the converter ~~is acted upon by~~ and is supplied with a plurality of polyphase test signals via a polyphase electric winding of the machine at a plurality of stator angles (α1, α2, α3), with substantially no movement of the rotor~~(1b)~~;
- measuring causal consequences of a respective polyphase test signal at a respective angular stator position;
- determining a measuring value (r1, r2; z_i) ~~is determined~~ from the measured causal consequences of ~~a~~ the respective polyphase test signal at ~~a~~ the respective angular stator position of the stator of the connected polyphase machine;

- determining a plurality of measuring values ~~($Z_i(\alpha)$) determined in this fashion establish a~~ and establishing a comparison function ~~(60, 50)~~, whereby said measuring values are resistance or impedance values (z_i) are provided over the plurality of angular stator positions (α_1) establishing the comparison function as a function over an electric rotary field angle (α);

to prepare ~~a determination of the~~ an allocation of a machine type ~~of~~ to the connected machine ~~(1)~~.

31. (Original) The process according to claim 30, wherein the causal consequence of a respective test signal at a respective stator angle (α; $\alpha1$, $\alpha2$) are current values and a measuring value determined therefrom is a respective resistance or impedance value (r_i, z_i) at a respective angular stator position (α_1).

32. (Cancelled).

33. (Currently Amended) The process according to claim 1 ~~or claim 30~~, wherein the ~~at least~~ first test signal and all further test signals are provided in a three-phase system of a three-phase ~~current (N) are given~~mains.

34. (Currently Amended) The process according to claim ~~1,~~ 30 ~~or 33~~, wherein each test signal is a three-phase signal which forms a ~~flow~~ flux vector in the angular stator system (α) and~~,~~ ~~in the case of~~ for a plurality of dissimilar angles ($\alpha1$, $\alpha2$, $\alpha3$), test signals are given for the ~~formation of a~~ establishing a measuring value function ~~(50, 60)~~ as ~~a~~ the comparison function of

the connected machine ~~(1), which can~~ <u>suitable to</u> be stored over the stator angle (α) or <u>to</u> be plotted.

35. (Currently Amended) The process according to claim 34, wherein the test signals ~~are such that the~~ <u>are not rotating the</u> rotor ~~was not rotated~~ or only rotate~~d a bit~~ <u>the rotor minimally</u> until a complete comparison function ~~had been~~ <u>is</u> completed.

36. (Currently Amended) The process according to claim ~~1 or~~ 30, wherein the electric angles ($\alpha 1$, $\alpha 2$) of several test signals and the mechanical angular position (φ) of the rotor ~~(1b)~~ relative to each <u>other</u> are changed~~, in particular moved,~~ in order to ~~be able to~~ detect different positions of the rotor with respect to the angles of the test signals from the stator.

37. (Currently Amended) The process according to claim ~~1,~~ 30 ~~or 36~~, wherein the angles <u>as</u> ~~(~~angular positions~~)~~ relate to a pair of poles.

38. (Currently Amended) The process according to claim ~~1 or~~ 36, wherein the angular differences between adjacent angles of two test signals are less than 10°~~, in particular less than 3º~~.

39. (Currently Amended) The process according to claim ~~1 or~~ 36, wherein one direction of movement of a test signal during the establishing of the comparison function ~~(50, 60)~~ changes repeatedly in order to minimize an effective rotation of the rotor ~~(1b)~~.

40. (Currently Amended) A device that is operable in accordance with ~~any of the preceding~~ the process recited in claims~~s~~ 1.

41. (Currently Amended) A process for the recognition of a polyphase machine ~~(1)~~ connected to a converter ~~(10)~~, ~~which~~ the machine comprises a stator and a rotor ~~(1a, 1b)~~, ~~in particular prior to an active productive operation of the machine, with the following steps of~~ the process comprising:

(a) connecting ~~of~~ the polyphase machine with its several electric phases to the converter ~~(10)~~;

(b) supplying of a first test signal from the converter (10) to at least one~~, preferably~~ or a few of the several electric phases of the connected polyphase machine (1);

(c) measuring ~~of~~ at least one causal consequence of the first test signal as measured result;

(d) evaluating ~~of~~ the measured result ~~(~~of the causal consequence~~)~~ in order to obtain a first measuring value (r1, r2) and allocating ~~of this~~ the measuring value to a comparison function ~~(60, 50)~~;

(e) comparing ~~of~~ the comparison function with at least one of several reference functions ~~(60a, 60b, 50a, 50b)~~, each of which representing one type of a polyphase machine, ~~in particular~~ whereby two reference functions do not represent the same type of machines, ~~in order~~ to select ~~the~~ a reference function which is most similar to the comparison function ~~(50, 60)~~;

(h) ~~stipulating of (25) one~~ providing one of several available system programs ~~(12a, 12b, 12c)~~ in a control ~~(11)~~ of the converter ~~(10)~~ by means of the selected reference function;

to adapt the converter ~~(10)~~ to the machine ~~to be activated by it~~.

42. (Currently Amended) The process according to claim 41, wherein the comparison function for all windings of all ~~(~~electric phases~~)~~ of the polyphase machine is created with several measuring results of several test signals, ~~said several~~ and each measuring results ~~gradually forming and/or expanding~~ enhances the comparison function.

43. (Currently Amended) The process according to claim 42, wherein the comparison function is compared with several reference functions in order to determine ~~the~~ a most similar thereof and the machine type ~~appertaining to it~~ represented thereby.

44. (Original) The process according to claim 43, wherein at least two reference functions do not represent the same type of polyphase machine.

45. (Currently Amended) The process according to claim 41 ~~or 43~~, wherein one of the reference functions ~~(50a)~~ represents an asynchronous machine as a polyphase machine.

46. (Currently Amended) The process according to claim ~~45, 43 or~~ 41, wherein one of the reference functions ~~(60a)~~ represents a synchronous machine as a polyphase machine.

47. (Original) The process according to claim 46, wherein one of the reference functions represents a synchronous generator as a synchronous machine.

48. (Currently Amended) The process according to claim 41, wherein the converter comprises a control ~~part (11)~~ section and a power ~~part (10)~~ section.

49. (Currently Amended) The process according to claim 41, wherein the converter is a power device which provides power actuating signals ~~during~~ at several electric output phases ~~(n, 4)~~ and obtains ~~the~~ actuating ~~signals~~ power from an intermediate circuit, which is fed from a rectifier from a mains ~~(9, N)~~.

50. (Currently Amended) The process according to claim 41, wherein the comparison function ~~(60, 50)~~ and the at least one reference function ~~(50a, 60a)~~ represents the same physical magnitude as a sequence of measuring values (r1, r2) over the same system magnitude ~~(α)~~.

51. (Currently Amended) ~~A~~ The process according to claim 50, wherein the physical magnitude is a resistance or impedance (Z) over a stator angle (α) of the connected polyphase machine.

52. (Currently Amended) The process according to claim 50, wherein a course of the physical magnitude as a measuring value sequence in the reference function ~~(50a, 50b)~~ is substantially constant over a stator angle (α).

53. (Currently Amended) The process according to claim 50~~ or 52~~, wherein at least one reference function ~~(50a, 50b)~~ does not have any distinct maximum and any distinct minimum.

54. (Currently Amended) he process according to claim 50, wherein a course of the physical magnitude of at least one reference function has at least one distinct minimum and at least one distinct maximum~~ (60a, 60b)~~.

55. (Currently Amended) The process according to claim 41, wherein at least the majority of the measured resistance and impedance values (r1, r2, ...)~~, which are ascertained as measuring values, if plotted~~ <u>allocated</u> over the stator angle (α), are within a band (b) which is formed by not more than substantially ±20% of a mean value which results from the measuring values~~, in particular within a band of less than ±10% of the mean value~~.

56. (Currently Amended) The process according to ~~any of the preceding~~ claims 41~~ to 45~~, wherein the measuring magnitude from the measured causal consequence of the first test signal is another physical magnitude ~~as~~ <u>than</u> an impedance or <u>a</u> resistance.

57. (Currently Amended) The process according to claim 41~~ to 50~~, wherein several measuring results are evaluated and are allocated to the comparison function as several measuring values ~~(50, 60)~~, the evaluation including a conversion to determine a measuring value from the measuring result~~, e.g. a resistance or impedance calculation from a current measurement~~.

58. (Currently Amended) The process according to claim 41, wherein the several system programs ~~(12a, 12b, 12c) stand~~ are provided for several types of polyphase machines ~~(1), in particular as a regulator program part, a control program part or a monitoring program part~~.

59. (Currently Amended) The process according to claim 41, wherein the at least one causal consequence are ~~one or several of~~ current, voltage, rotary speed or change in position.

60. (Original) The process according to claim 41, wherein the at least first test signal is a stationary alternating signal, a pulse signal or a short-term frequency alternating signal.

61. (Currently Amended) The process according to claim 60, wherein the alternating signal has a frequency of at least 10 Hz~~, in particular a multiple thereof,~~ in order not to substantially ~~change~~ move a rotor of the polyphase machine in ~~it's~~ a rotational position (φ) thereof, while the alternating signal is present at the electric phases ~~or windings~~ of the polyphase machine ~~(1)~~.

62. (Currently Amended) The process according to claims 41~~, 42 or 60~~, wherein a respective test signal is impressed on the several phases at the same time and ~~is a respective~~ being polyphase test signals.

63. (Currently Amended) The process according to claim 60 ~~or 61~~, wherein the first test signal has a frequency of more than substantially 100 Hz.

64. (Currently Amended) The process according to claims 41~~, 60 or 63~~, wherein an alternating basic signal of less than substantially 10 Hz as the polyphase actuating signal ~~lets~~ initiates the rotor ~~(1b)~~ of the polyphase machine ~~(1)~~ to slowly ~~rotate in its~~ change a rotational position (φ) and several test signals are modulated onto the polyphase regulation variable at a time ~~distance~~ interval.

65. (Currently Amended) The process according to claim 41 ~~or 60~~, wherein the rotor ~~(1b)~~ of the polyphase machine is moved to several~~, not equal~~ ~~(~~different~~)~~ rotor positions (φ1, φ2) with an actuating signal in order to apply a respective test signal to the electric phases remaining at a respective rotational position and to measure ~~the~~ a respective causal consequence ~~for the evaluation to several measuring values for the comparison function (50, 60)~~.

66. (Currently Amended) The process according to claim 65, wherein movement to a plurality of rotor positions (φ)~~, in particular more than 50 rotational positions~~ of the polyphase machine, takes place and are measured as regards ~~the~~ a respectively causal consequence ~~at~~ for a respective test signal.

67. (Original) The process according to claim 41, wherein steps (b) to (d) a repeated for a further test signal to obtain a further measuring value (r2).

68. (Currently Amended) The process according to claim 67, wherein the repetition is carried out repeatedly until a comparison function ~~(50, 60)~~ provided with several measuring values is formed, ~~which is~~ for ~~compared~~ comparison with the at least one reference function ~~(60a, 60b, 50a, 50b)~~ according to ~~feature~~ step (e) ~~of claim 1~~.

69. (Currently Amended) The process according to claim 67~~ or 68~~, wherein each further polyphase test signal as a second, third, etc. test signal is a polyphase test signal for forming several ~~flow~~ flux position vectors in the stator system (α) of the machine~~ (1)~~, said vectors being located at different angular positions ($\alpha 1$, $\alpha 2$, $\alpha 3$) of the stator with ~~practically~~ no substantial movement of the rotor~~ (1b)~~.

70. (Currently Amended) The process according to claim 1, wherein during at least steps (b) to (f) the machine ~~(1)~~ is already coupled at a power take-off side via a shaft~~ (2), whereas at least steps (b) to (f) are implemented~~.

71. (Currently Amended) The process according to claim 1, wherein the machine (1) ~~practically~~ does not substantially rotate during a recognition phase with at least non-recurring or repeated steps (b) to (f).

72. (Original) The process according to claim 1, wherein the supplying of further test signals takes place at a respectively different electric angular position (α) of the stator field.

73. (Original) The process according to claim 72, wherein the test signals are equal.

74. (New) A process for preparing a recognition of a type of a connected polyphase machine as a machine with a rotor and a stator, said machine being supplyable by a converter by actuating signals to several electric phases; wherein

- the machine is connected to the converter and is supplied with a plurality of polyphase test signals via a polyphase electric winding of the machine at a plurality of stator angles with substantially no movement of the rotor during supply of a respective test signal;
- measuring causal consequences of a respective test signal at a respective angular stator position;
- determining a measuring value (r1, r2; z_i) from the measured causal consequences of the respective test signal at the respective angular stator position of the stator of the connected polyphase machine;
- determining a plurality of such measuring values and establishing a comparison function;
- wherein electric angles of several of said test signals are changed relative to the mechanical angular positions (φ) of the rotor in order to detect different positions of the rotor with respect to the angles of the test signals from the stator;

to prepare an allocation of a machine type to the connected machine.

75. (New) The process of claim 1, wherein the process for a recognition of a polyphase machine occurs prior to an active productive operation of the machine.

76. (New) The process of claim 1, wherein the first test signal is supplied to at least one of the several electric phases.

77. (New) The process of claim 1, wherein the two reference functions are representing different types of machine.

78. (New) The process of claim 15, wherein the band is formed by less than ±10% of the mean value.

79. (New) The process of claim 17, wherein the conversion comprises a resistance or an impedance calculation using a current measurement.

80. (New) The process of claim 18, wherein the system programs are at least one of a regulator program part, a control program part, and a monitoring program part.

81. (New) The process of claim 26, wherein more than 50 rotational positions are provided for a plurality of rotor positions.

82. (New) The process of claim 38, wherein the angular differences between adjacent angles of two test signals are less than 3°.

83. (New) A device that is operable in accordance with the process steps of claim 30.

84 (New) The process of claim 55, the band is formed by not more than ±10% of the mean value.

85. (New) The process of claim 58, wherein the system programs are at lest one of a regulator program part, a control program part, and a monitoring program part.